UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,348	11/07/2001	Yeshik Shin	594728116US	1335

25096   7590   10/04/2006

PERKINS COIE LLP
PATENT-SEA
P.O. BOX 1247
SEATTLE, WA 98111-1247

EXAMINER
MAIS, MARK A

ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 10/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/045,348	SHIN ET AL.
	Examiner	Art Unit	
	Mark A. Mais	2616	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>02 May 2002</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e)

from provision application 60/252,724 filed on November 22, 2000 is acknowledged.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form

the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3, 5, and 8-32 are rejected under 35 U.S.C. 102(e) as being anticipated by

Latif et al. (USP 6,400,730).

4. With regard to claims 1, 5, 8, 13, and 15, Latif et al. discloses a method for

transmitting packets through a network **[Fig. 2, IP network 60]** between a first

communications node **[Fig. 2, SoIP device 50]** and a second communications node **[Fig.**

2, Fiber storage device], the method comprising:

transmitting from the first communications node to the network a first sequence of

packets **[Fig. 2, SoIP Device 50 (host—claim 5) transmitting packets to IP network**

60];

transmitting from the network to the second communications node the first

sequence of packets in sequential order **[Fig. 2, packets are transmitted through IP**

network 60 and switch 35 to Fiber storage device (data store device—claims 5, 8,

and 15)];

transmitting from the second communications node to the network a second

sequence of packets **[Fiber storage device transmits packets to SoIP device 50**

through IP network 60 and switch 35]; and

transmitting from the network to the first communications node the second

sequence of packets in a non-sequential order **[Fig. 2, SoIP device 50 receives packets**

from Fiber Storage Device through switch 35 and IP network 60; IP network

delivery of packets is interpreted as non-guaranteed sequential order]

whereby sequential order is guaranteed when packets are received by the second

communications node **[Fig. 2; Fiber channel requires a serial interface, col. 6, line 14;**

a serial connection is interpreted as guaranteed sequential order (one transmission

is one transaction—claim 13)] and is not guaranteed when packets are received by the

first communications node **[Fig. 2, SoIP device 50 receives packets from Fiber Storage**

Device through switch 35 and IP network 60; IP network delivery of packets is

interpreted as non-guaranteed sequential order].

5. With regard to claims 17, 18, 19, 21, 23, and 24, Latif et al. discloses a method for

transmitting packets from a first communications device [**Fig. 2, SoIP device 50**] to a

second communications device [**Fig. 2, Fiber storage device**], the method comprising:

transmitting a sequence of packets from the first communications device to the

second communications device [**Fig. 2, SoIP Device 50 transmitting packets through**

IP network 60 (switching network—claim 19) and switch 35 to Fiber storage device

(data store device—claims 23 and 24)] wherein the packets arrive at the second

communications device in an order that is guaranteed to be sequential [**Fiber channel**

requires a serial interface, col. 6, line 14; a serial connection is interpreted as

guaranteed sequential order (one transmission is one transaction—claim 18)]; and

transmitting a sequence of packets from the second communications device to the

first communications device [**Fiber storage device transmits packets to SoIP device 50**

through IP network 60 and switch 35]; wherein the packets arrive at the first

communications device in an order that is not guaranteed to be sequential [**Fig. 2, SoIP**

device 50 receives packets from Fiber Storage Device through switch 35 and IP

network 60; IP network delivery of packets is interpreted as non-guaranteed

sequential order due to multiple paths in an IP network/cloud (claim 21)].

6. With regard to claims 25, 26, 28, and 29, Latif et al. discloses a device [**Fig. 2, switch**

35 (claim 26)] for transmitting packets of a transaction between a host [**Fig. 2, SoIP**

device 50] to a data store device [**Fig. 2, Fiber storage device (claim 30)**] comprising:

a component [**Fig. 2, one port (claim 28) of switch 35 which is connected**

serially to Fiber storage device] that receives in sequential order packets of a

transaction that are to be transmitted from the host and for transmitting in sequential

order the packets of the transaction to the data store device wherein the packets of the

transaction arrive at the data store device in an order that is guaranteed to be sequential

[Fiber channel requires a serial interface, col. 6, line 14; a serial connection is

interpreted as guaranteed sequential order]; and

a component **[Fig. 2, the ports (claim 28) of switch 35 multiply-connected to**

IP network 60; this switch is interpreted as multiple input/multiple output switch

which utilizes multiple outputs for connection to IP network 60 (and SoIP 50—claim

29) and one serial output to fiber storage device] that receives packets of a transaction

from the data store device and for transmitting the packets of the transaction to the host

wherein the packets of the transaction arrive at the host in an order that is not guaranteed

to be sequential **[Fig. 2, SoIP device 50 receives packets from Fiber Storage Device**

through switch 35 and IP network 60; IP network delivery of packets is interpreted

as non-guaranteed sequential order].

7. With regard to claims 31 and 32, Latif et al. discloses a device **[Fig. 2, switch 35**

(claim 32)] for transmitting packets of transactions, the packets of a transaction having a

sequential order, comprising:

means for transmitting packets of a transaction **[Fig. 2, one port of switch 35**

which is connected serially to Fiber storage device] originating from a first node **[Fig.**

2, SoIP device 50] and destined to a second node **[Fig. 2, Fiber storage device]**, wherein

sequential order of arrival of the packets of the transaction at the second node is assured

[Fiber channel requires a serial interface, col. 6, line 14; a serial connection is interpreted as guaranteed sequential order]; and

means for transmitting packets of a transaction [Fig. 2, the ports (claim 28) of switch 35 multiply-connected to IP network 60; this switch is interpreted as multiple input/multiple output switch which utilizes multiple outputs for connection to IP network 60 (and SoIP 50—claim 29) and one serial output to fiber storage device] originating from the second node and destined to the first node, wherein sequential order of arrival of the packets of the transaction at the first node is not assured [Fig. 2, SoIP device 50 receives packets from Fiber Storage Device through switch 35 and IP network 60; IP network delivery of packets is interpreted as non-guaranteed sequential order].

8. With regard to claim 2, Latif et al. discloses that the network includes multiple paths from the first communications node to the second communications node [Fig. 2, IP network 60; an IP network is interpreted as using multiple paths between SoIP device 50 to Fiber storage device (through switch 35)].

9. With regard to claims 3 and 20, Latif et al. discloses that all packets of the first sequence are transmitted along the same path [All packets from SoIP device 50 must be transmitted along the serial connection (same path) between switch 35 and Fiber storage device].

10. With regard to claim 8, Latif et al. discloses that the second communications node does not have a capability to reorder a sequence of packets [**Fig. 2, fiber storage device; since fiber is transmitted serially, it does not need to perform packet resequencing; this is interpreted as not having the capability to reorder a sequence of packets**].

11. With regard to claim 10, Latif et al. discloses that the first communications node has a capability to reorder a sequence of packets [**Fig. 2, SoIP devices 50 within SoIP storage area network, col. 6, lines 6-8; since SoIP device 50 works using IP, it necessarily need to resequence packets received out of order from the IP network; this is interpreted as having the capability to reorder a sequence of packets**].

12. With regard to claims 11, Latif et al. discloses that the network includes switches that transmit the packets of the second sequence on different paths to effect load balancing [**routing within IP networks is performed by switches and routers (col. 17, lines 12-16) using load balancing (col. 17, lines 10-12) with respect to the detected "conversations" (related frames , col. 16, lines 55-57 (same transaction— claim 12); this is interpreted as the load-balanced transmission of packets from Fiber storage device to SoIP 50 through IP network 60**].

13. With regard to claims 14, 22, and 27, Latif et al. discloses that the first communications node, the second communications node, and the network are part of a storage area network [**Fig. 2; col. 6, lines 6-8**].

14. With regard to claim 16, Latif et al. discloses that the second communications node does not have an ability to reorder packets of a transaction **[Fig. 2, fiber storage device; since fiber is transmitted serially, it does not need to perform packet resequencing; this is interpreted as not having the capability to reorder a sequence of packets]**.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. Claims 4, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Latif et al.

17. With regard to claim 4, Latif et al. discloses **[Fig. 2]** an SoIP device 50 which receives packets from Fiber Storage Device through switch 35 and IP network 60. Furthermore, IP network delivery of packets is interpreted as non-guaranteed sequential order due to multiple paths in an IP network/cloud **[Fig. 2]**. Latif et al. does not specifically disclose that at least two packets travel along different paths. However, it is well known in the art that packets traveling through an IP network can (and do) travel along different paths. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention that packets would travel along different IP network paths because that is the nature of an IP network/cloud which does not have any service

guarantees (i.e., only uses "best effort" to get packets form one point to another without concrete guarantees on path, time, or sequence).

18. Latif et al. discloses that SoIP Device 50 transmitting packets through IP network 60 and switch 35 to Fiber storage device [Fig. 2]. Moreover, Fiber channel requires a serial interface [col. 6, line 14]. A serial connection is interpreted as guaranteed sequential order. Latif et al. does not specifically disclose caching data from a computer program write operation to a storage area network. It is well known in the art that computer programs can access storage area networks for both read and write functions. Furthermore, a write sequence to a storage area network necessarily requires the data to be saved in cache or RAM until the data can be transmitted over the network. This is done to free up resources for multiple processes being executed by the processor executing the computer program. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention that a host's write operation data would be cached during transmission to a storage network because of timing, propagation delays, and errors in transporting the data to the storage area network.

19. With regard to claim 7, Latif et al. discloses [Fig. 2] an SoIP device 50 which receives packets from Fiber Storage Device through switch 35 and IP network 60. Furthermore, IP network delivery of packets is interpreted as non-guaranteed sequential order due to multiple paths in an IP network/cloud [Fig. 2]. Latif et al. does not specifically disclose halting the execution of a computer program until it receives

necessary data form a data storage network. However, it is well known in the art that

packets traveling through an IP network can (and do) travel along different IP network

paths because that is the nature of an IP network/cloud which does not have any service

guarantees (i.e., only uses "best effort" to get packets form one point to another without

concrete guarantees on path, time, or sequence). It is also well known in the art that

computer programs can access storage area networks for both read and write functions.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the

invention that that a processor would halt execution of a program (read operation) until it

received the correct/timely data needed for further execution of the program because the

data might be delayed/unreadable due to propagation delays, out-of-sequence or

resequencing delays, or dropped packets during that read operation.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure:

(a) Geng et al. (USP 6,971,044), Service clusters and method in a processing

system with failover capability.

(b) Jewett et al. (US Patent Publication 2002/0049825), Architecture for providing

block level storage access over a computer network.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark A. Mais whose telephone number is 572-272-3138. The examiner can normally be reached on M-Th 5am-4pm.

22. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

23. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MAM
September 15, 2006

SEEMA S. RAO   9/29/06
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600